SURFACE WATER WITHDRAWAL AND COASTAL ECONOMIC ISSUES

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REFERENCE: Proceedings of the 1999 Georgia Water Resources Conference, held March 30-31, 1999, at the University of Georgia. Kathryn J. Hatcher, editor, Institute of Ecology, University of Georgia, Athens, Georgia.

UNRESOLVED ISSUES AND UNDER-EVALUATED TRENDS IN COASTAL WATER RESOURCES

The following observations highlight the most troubling issues and related challenges to the management of water, aquatic resources, and the coastal economic activities that depends on them.

1. Data about conditions of water quality and flow are insufficient to determine existing threats or to evaluate the risks of new permitted activities affecting Georgia rivers.

2. Land-based activities (both urban and rural) are not adequately evaluated or controlled for their effects as non-point sources of pollution. Local governments do not have the technical expertise, accountability, nor political resolve to assume this responsibility.

3. On the coast there are strong indications of compromised water quality and flow affecting habitat in rivers and estuaries-- for example:

- average blue crab landings for the last 14 years are about 20% below the 40-year average (1958-1998);
- various species of finfish have nearly disappeared and many of those remaining are undersized and unhealthy;
- it is not uncommon to see fish having ulcers caused by invasive fungus -- generally associated with nutrient-loading, eutrophication, and pollution;
- salinity levels are rising significantly within intertidal areas -- species dependent on lower salinity are now found much further upriver than they were ten or twenty years ago, but the reasons are uncertain;
- nutrient loading in coastal rivers is mounting - one study found a rise of about 30% in the last 20 years;
- low-flow conditions in the Altamaha River have become gradually lower over the past two decades, believed to be caused by the combination of reduced groundwater outflow and lost wetlands functions.

4. There is a serious gap between the regulatory enforcement functions of EPD and the resource monitoring activities of the Coastal Resources Division of DNR. Neither agency is designated responsibility for the comprehensive protection, assessment, restoration, and/or management of habitat areas essential to fisheries, including those species of enormous economic importance to the region.

5. Although estimates vary by source, it is reasonable to conclude that the combined direct and indirect economic value of commercial and recreational fisheries in the region is between $500 and $700 million dollars and year. Nature-based tourism has never been surveyed locally, but based on national studies, it is assumed that at least one-quarter of all coastal tourism is based on natural resources. In coastal Georgia, the total annual tourism expenditure is $1.8 billion according to the Georgia Department of Industry, Trade, and Tourism; 25% of this total is $450 million. Therefore, the total economic activity derived from the region's natural resources is about $1 billion a year.

6. Economic development is typically viewed by decisionmakers in very narrow terms which fail to encompass the long-term impacts of development on public resources -- even those resources of significant economic importance to the region. The *defacto* result is the displacement of existing jobs supported by commercial and recreational fisheries and nature-based tourism by "new jobs" involving permitted activities which incrementally and cumulatively degrade water resources and habitat.

7. Current demand for water is greatly outpacing our ability to responsibly evaluate the consequences of withdrawing it. According to the EPD Public Advisory webpage of February 1999, within the Altamaha River system alone, there are pending withdrawal permit applications requesting a total of over 150 million gallons a day. In light of other indicators of compromised water quality and altered flow, this is particularly significant.

8. So-called non-consumptive use of water, if properly managed, does not increase risk of chemical contaminanation but may cause flow disruptions which can indirectly decrease water quality. Moreover, return of cycled water to surface waterways may alter temperature with unmonitored consequences. Continued aquifer use may cause further loss of freshwater outflow into surface water sources, which may adversely affect their function, especially during low-flow conditions.

9. Even marginal improvements in the conservation of water for industrial uses could abate future water demand for many years. Yet, due to long-established practices in permitting withdrawal of high-quality ground water by

industrial users, there are millions of gallons discharged daily after only one cooling cycle. A 5% improvement in water-using efficiency among the ten largest water-consuming coastal industries would allow the reallocation of enough water from the Floridan aquifer to support at least 50,000 people.

ESSENTIAL FISH HABITAT, NATURE TOURISM AND COASTAL GEORGIA WATER RESOURCES

Some 75% of the nation's commercial landings and 80 - 90% of recreational catch depends on estuaries, which comprise a large portion of coastal Georgia's inter-tidal areas. These vast wetlands and waterways provide a complex but poorly understood habitat with very dynamic characteristics determined by the interactive effects of: fresh water and waterborne contaminants from surface and ground sources, precipitation, and wastewater discharge; tidal fluctuations and storm surges; and numerous recreational and commercial activities (including dredging for harbor maintenance and expansion) conducted in or near coastal waters with increasing intensity as development continues. Moreover, due to the enormous scale of coastal watersheds, many inland activities directly or indirectly affect coastal resources and the activities dependent on them.

Georgia's most critical water quality problems are commonly attributed to non-point source pollution. Such pollution originates from residential, commercial, forestry, and agricultural activities, and these are of prime concern in protecting essential fish habitat. Local governments, with the exclusive authority over most siting and land-use decisions, are typically not sufficiently funded nor appropriately disposed to determine or enforce effective mitigation measures for development projects to reduce non-point pollution.

Some 60% of coastal Georgia's private land is used for commercial forestry, and much of this activity involves the use of herbicides, pesticides, and fertilizers which can cause major damage to water quality and aquatic, estuarine, and marine habitat.

The watersheds of coastal Georgia rivers include large areas further inland used for agriculture. Contaminants from these activities (both organic materials and petrochemicals) are a major threat to water quality and fish habitat in coastal Georgia. Among the greatest threats to coastal fisheries are animal feeding operations, which have caused nutrient overloading, triggering major outbreaks of deadly parasites killing millions of fish from Maryland to Florida. Georgia researchers have recently identified nutrient loading as a significant and growing problem in coastal rivers, raising fears of similar threats here.

These conditions strongly suggest critical trends adversely affecting the food web, which is utterly vital to a wide variety of marine species, from near-shore areas out to the open ocean.

Water quality and habitat functions are directly related to flow conditions of coastal rivers and groundwater sources which supply fresh water to the intertidal 'mixing zone.' Evidence of reduced water quality underscores the importance of understanding more about these relationships before any further permits affecting water flow or quality are granted.

There are significant risks associated with the combined effect of numerous proposed withdrawals from coastal rivers, yet no assessment of the cumulative consequences of these numerous permits is included in the review procedures now in place.

Coastal Georgia is at a critical point in its development. Although some 25% of the region's upland area is in state or federal management/ownership, private lands include at least 75 toxic waste sites (containing heavy metals, PCBs and organochlorines), and the region incurs about five times the state *per capita* average in reported toxic emissions.

Nationally, it is estimated that an effective Essential Fish Habitat program (under the Magnuson-Stevens Act) could support a $27 billion increase in economic activity and 536,000 jobs related to fisheries-based businesses. Georgia's share of this could amount to $150 million and at least 5,000 jobs, about a 25% increase (National Marine Fisheries Service). But to realize such benefits, we must adopt new standards.

The region's significant economic benefits derived from natural resources (directly and indirectly supporting at least $1 billion in yearly business activity, as described in item 5 above) are virtually never addressed in evaluating new development proposals. Impacts of such projects on the resources required by existing business enterprise are undisclosed and unacknowledged. This results in counterproductive public and private ventures intended to create new economic opportunities that also threaten current jobs by degrading resources. It is vital to the public interest that more complete analysis is applied in making such decisions in the future. Unless this type of procedure is soon adopted, over the long term we will destroy the resource base which sustains a significant portion of our economy and enriches the region's quality of life.